

NOTES ON INSTALLATION

The height above ground (or other reflecting surface, such as a roof) of your antenna will affect its performance in several important ways. At heights below $1/2$ wavelength (less than 35 feet on the 20 meter band), ground reflections are strong enough to modify the radiation resistance and resonant length of the elements considerably, and it may be difficult to obtain a good match and front-to-back ratio to 50 ohm line on the bands where this height occurs. In general, the height of the antenna should be as great as possible, up to the point where feed line losses become considerable.

If a tall tower anchored with metal guy-wires is used, long or resonant guy-wire lengths should be avoided, as these conditions adversely affect pattern and match of the antenna. Metallic guy-wires should be "broken" into non-resonant lengths with insulators, with no length greater than 25 or 30 feet. Guy-wires should be "broken" into shorter lengths near the top of the tower (and the antenna) than near the ground or anchor point.

A rotator of fairly rugged design and high torque is required to turn the 3-element beam (65 lbs.), while a lower torque rotator, such as used with large TV arrays, will turn the 2-element beam (35 lbs.). The rotator may be mounted at the tower-top, coupled directly to the antenna mast, or it may be placed down the tower, and an extension pole used to reach the mast. Unless the rotator bearings are particularly rugged, and the rotator placed close to the antenna, an additional bearing should be placed around the mast and seated at the top of the tower. Do not leave more than six inches between the bearing and the mast mounting bracket on the 3-element antenna, Model #3220.